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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,064	08/20/2003	Shivakumar Seetharaman	P16569	8160

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EXAMINER

CHOE, HENRY

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,064

Applicant(s)

SEETHARAMAN ET AL.

Examiner

Henry K. Choe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-25 is/are allowed.
- 6) ☒ Claim(s) 1,5,7,8,13,26 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-4, 6 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Mark-up of Fig. 1 of 6,294,966</u> |

DETAILED ACTION

Claim Objections

Claim 26 is objected to because of the following informalities: In line 6 of claim 26, should "the output terminal" be --an output terminal--? Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al (Figs. 1 and 2).

Regarding claim 26, Huang et al (Figs. 1 and 2) discloses an interconnection device comprising an input terminal (port 1) to receive an input signal (a signal coming into an input terminal port 1), Cq can be read as the claimed off-chip capacitor since Cq inherently possess capacitances and separates from a Integrated Circuit 22 comprising a terminal (upper terminal of Cq) coupled to a circuit bonding pad [(12); It should be noted that the bonding area 12 can be read as the claimed circuit bonding pad since it (12) bonds with the conductors 14 and 15], and a plurality of conductors (14, 15) formed between the circuit bonding pad (12) and the input terminal (port 1) and the conductors (14, 15) being insulated [(space or gap between conductors 14 and 15); It should be

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noted that the space or gap between conductors 14 and 15 can be read as the claimed insulated since it (space or gap) isolates the conductors 14 and 15 from each other.] from one another over at least a portion between the output terminal [(right terminal of a transmission line 20); It should be noted that the right terminal of a transmission line 20 can be read as the claimed output terminal since the signal is flowing from the left terminal of the transmission line 20 to the right terminal of a transmission line 20] and the circuit bonding pad (12).

Regarding claim 27, the plurality of conductors (14, 15) is formed as a portion of a semiconductor device layout since the conductors 14 and 15 are formed on the substrate 24 and the substrate is a well known semiconductor device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 7, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seetharaman et al (Fig. 3) in view of Huang et al (Figs. 1 and 2).

Regarding claims 1 and 8, Seetharaman et al (Fig. 3) discloses a transimpedance amplifier circuit comprising an input terminal (input terminal of 302) to receive an input signal (a signal coming into the input terminal of 302) from a photodiode (308), an amplifier (302) to provide an amplified voltage signal (312 or 314)

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at an output terminal (output terminal of 302) in response to a voltage representative of the input signal (a signal coming into the input terminal of 302), and a filter (316 or 318). As described above, Seetharaman et al (Fig. 3) discloses all the limitations in the claims except for that the internal structures of the filter. Huang et al (Figs. 1 and 2) discloses an interconnection device comprising an input terminal (port 1) to receive an input signal (a signal coming into an input terminal port 1), Cq can be read as the claimed off-chip capacitor since Cq inherently possess capacitances and separates from a Integrated Circuit 22 comprising a terminal (upper terminal of Cq) coupled to a circuit bonding pad [(12); It should be noted that the bonding area 12 can be read as the claimed circuit bonding pad since it (12) bonds with the conductors 14 and 15]; and a plurality of conductors (14, 15) formed between the circuit bonding pad (12) and the input terminal (port 1) and the conductors (14, 15) being insulated [(space or gap between conductors 14 and 15); It should be noted that the space or gap between conductors 14 and 15 can be read as the claimed insulated since it (space or gap) isolates the conductors 14 and 15 from each other.] from one another over at least a portion between the output terminal [(right terminal of a transmission line 20); It should be noted that the right terminal of a transmission line 20 can be read as the claimed output terminal since the signal is flowing from the left terminal of the transmission line 20 to the right terminal of a transmission line 20] and the circuit bonding pad (12). It would have been obvious to substitute Huang et al's interconnection device (Figs 1 and 2 of Huang et al) in place of Seetharaman et al's LPF (316 or 318 of Seetharaman et al) since Seetharaman et al

(Fig. 3) discloses a generic Low Pass Filter thereby suggesting that any equivalent filter would have been usable in Seetharaman et al's reference.

Regarding claim 5, Seetharaman et al (Fig. 3) further comprising the transimpedance amplifier (Fig. 3) includes differential output terminals (output terminals of 302) to provide a differential output signals (312 and 314) and the amplifier (320) receives the voltage representative of the composite signal (312, 314) from the differential output terminals (output terminals of 302).

Regarding claims 7 and 13, Huang et al (Figs. 1 and 2) further comprising the plurality of conductors (14, 15) is formed as a portion of a semiconductor device layout since the conductors 14 and 15 are formed on the substrate 24 and the substrate is a well known semiconductor device.

Allowable Subject Matter

Claims 2-4, 6 and 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Allowance

Claims 14-25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 14 and 20, the closest prior art of record, Seetharaman et al

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(Fig. 3) does not disclose the following limitations: a deserializer and its functional limitations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent number (6,781,468) is a transimpedance amplifier.

Patent numbers (6,043,724; 6,854,030) are the LPF circuits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (571) 272-1760.


HENRY CHOE
PRIMARY EXAMINER

#1171